<110> Kazemi-Esfarjani, Parsa
      Benzer, Seymour

<120> AN ANIMAL MODEL OF POLYGLUTAMINE
   TOXICITY, METHODS OF USE, AND MODULATORS OF POLYGLUTAMINE
   TOXICITY

<130> 06618-686001

<140> US 09/639,207
<141> 2000-08-14

<150> US 60/148,934
<151> 1999-08-12

<150> US 60/148,933
<151> 1999-08-12

<150> US 60/177,047
<151> 2000-01-18

<150> US 60/205,720
<151> 2000-05-19

<160> 69

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 508
<212> PRT
<213> Human

<400> 1
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Ser Ser Asn Ser Glu Met Asp Val Glu Ile Thr Thr Glu Gln Pro Thr
                20               25                  30
Ile Asp Val Lys Ala Glu Gln Ile Val Pro Lys Asp Ala Ala Thr Ile
                35                  40                  45
Ala Glu Glu Lys Lys Lys Leu Gly Asn Asp Gln Tyr Lys Ala Gln Asn
    50                  55                  60
Tyr Gln Asn Ala Leu Lys Leu Tyr Thr Asp Ala Ile Ser Leu Cys Pro
65                  70                  75                  80
Asp Ser Ala Ala Tyr Tyr Gly Asn Arg Ala Ala Cys Tyr Met Met Leu
                85                  90                  95
Leu Asn Tyr Asn Ser Ala Leu Thr Asp Ala Arg His Ala Ile Arg Ile
                100                 105                 110
Asp Pro Gly Phe Glu Lys Ala Tyr Val Arg Val Ala Lys Cys Cys Leu
            115                 120                 125
Ala Leu Gly Asp Ile Ile Gly Thr Glu Gln Ala Val Lys Met Val Asn
    130                 135                 140
Glu Leu Asn Ser Leu Ser Thr Ala Val Ala Ala Glu Gln Thr Ala Ala
145                 150                 155                 160
Gln Lys Leu Arg Gln Leu Glu Ala Thr Ile Gln Ala Asn Tyr Asp Thr
                165                 170                 175
Lys Ser Tyr Arg Asn Val Val Phe Tyr Leu Asp Ser Ala Leu Lys Leu
            180                 185                 190
```

```
Ala Pro Ala Cys Leu Lys Tyr Arg Leu Leu Lys Ala Glu Cys Leu Ala
    195                 200             205
Phe Leu Gly Arg Cys Asp Glu Ala Leu Asp Ile Ala Val Ser Val Met
    210             215             220
Lys Leu Asp Thr Thr Ser Ala Asp Ala Ile Tyr Val Arg Gly Leu Cys
225             230             235             240
Leu Tyr Tyr Thr Asp Asn Leu Asp Lys Gly Ile Leu His Phe Glu Arg
            245             250             255
Ala Leu Thr Leu Asp Pro Asp His Tyr Lys Ser Lys Gln Met Arg Ser
        260             265             270
Lys Cys Lys Gln Leu Lys Glu Met Lys Glu Asn Gly Asn Met Leu Phe
        275             280             285
Lys Ser Gly Arg Tyr Arg Glu Ala His Val Ile Tyr Thr Asp Ala Leu
    290             295             300
Lys Ile Asp Glu His Asn Lys Asp Ile Asn Ser Lys Leu Leu Tyr Asn
305             310             315             320
Arg Ala Leu Val Asn Thr Arg Ile Gly Asn Leu Arg Glu Ala Val Ala
            325             330             335
Asp Cys Asn Arg Val Leu Glu Leu Asn Ser Gln Tyr Leu Lys Ala Leu
            340             345             350
Leu Leu Arg Ala Arg Cys Tyr Asn Asp Leu Glu Lys Phe Glu Glu Ser
        355             360             365
Val Ala Asp Tyr Glu Thr Ala Leu Gln Leu Glu Lys Thr Pro Glu Ile
    370             375             380
Lys Arg Met Leu Arg Glu Ala Lys Phe Ala Leu Lys Lys Ser Lys Arg
385             390             395             400
Lys Asp Tyr Tyr Lys Ile Leu Gly Ile Gly Arg Asn Ala Ser Asp Asp
            405             410             415
Glu Ile Lys Lys Ala Tyr Arg Lys Lys Ala Leu Val His His Pro Asp
            420             425             430
Arg His Ala Asn Ser Ser Ala Glu Glu Arg Lys Glu Glu Glu Leu Lys
        435             440             445
Phe Lys Glu Val Gly Glu Ala Tyr Ala Ile Leu Ser Asp Ala His Lys
    450             455             460
Lys Ser Arg Tyr Asp Ser Gly Gln Asp Ile Glu Glu Gln Glu Gln Ala
465             470             475             480
Asp Phe Asp Pro Asn Gln Met Phe Arg Thr Phe Phe Gln Phe Asn Gly
            485             490             495
Gly Gly Arg Asn Asn Ser Ser Phe Asn Phe Glu Phe
        500             505
```

<210> 2
<211> 2239
<212> DNA
<213> Drosophila

<400> 2
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ggcacgagcc actacttcgc atggcacgct ttttccgtg tgctcggttc gttcggccat          60
acaaaacaca aaattcaagt ttaaaaacta aataggcaac taaaagggaa gccgcagcga         120
ataaagtgat ttgctgaaag agacgtaaga aagttaatcg catcgaaggc accagaaatc         180
ggggatttct aacacggcgc gcgtgcgacg tacatacata cgcaagcgca cacacacacg         240
aacaattact tgccattgac gcaaaagcga aaaagcagtg gaataaaggg gaattgacaa         300
ataacaacgt tttgcaagca ctggactctg tcgctggtg ttctttcatt ttgtaattgc         360
cacgcatgga cgacgaagta attgaaatta gcgacagcga acgcgaagaa acctcatcga         420
actccgaaat ggatgtggaa ataacgacag aacagccaac catcgatgtc aaagcagagc         480
aaattgtgcc caaggacgcg gcaaccattg ccgaggagaa gaagaaactg ggcaacgacc         540
aatacaaggc gcagaactat cagaatgcac tcaagctcta cacggatgcc atatcgctgt         600
gtccggactc ggcggcatac tatggcaatc gggccgcctg ctacatgatg ctgctcaact         660
ataatagcgc cctgaccgac gcccgacacg ccatacgcat cgatccgggc ttcgagaagg         720
cctacgtccg tgtggccaag tgctgtctgg ccctgggcga cattattggc accgaacagg         780
ccgtcaaaat ggtcaacgag ctgaattcgc ttagcacggc tgttgctgcc gaacagacgg         840
```

```
cggcgcaaaa gttgcgccaa ttggaggcca ccattcaggc gaactacgat acgaaatcct    900
atcgcaatgt ggtcttctat ttggatagtg ccttgaaatt ggcgcccgcc tgtttgaaat    960
atcgtctact caaggctgag tgccttgcat ttttggggcg atgtgatgag gccttggaca   1020
ttgcggtcag tgtaatgaaa ctggatacca catcggcgga tgcgatatac gtgagaggtc   1080
tgtgcctgta ctacacggac aacctggaca agggaattct tcatttcgag cgcgccctga   1140
ccctcgaccc ggaccactac aagtccaagc agatgcgcag caaatgcaag cagctcaagg   1200
agatgaagga gaacggcaat atgctattca agtcgggtcg gtatcgcgag gcacacgtta   1260
tctacacgga cgccctgaag atcgatgaac acaacaagga tatcaattcg aaattgcttt   1320
acaatcgggc tttggtcaac acgcgtattg gcaatttgcg agaggccgtg gccgattgca   1380
atcgagtgct ggagctgaat agtcagtatc tgaaggctct gttgctgcga gcgcgctgct   1440
acaatgatct ggagaagttc gaggagtcgg tggcggacta tgagacggcg ctgcagctgg   1500
agaagacgcc ggagattaag cgaatgctgc gcgaggccaa gtttgcgttg aagaagtcga   1560
agcgaaagga ctactacaag atcctgggca ttggacgcaa tgcgtccgac gacgagatca   1620
agaaggcgta tcgcaaaaag gcgctggtac atcatccgga tcgacacgca aacagcagtg   1680
ccgaggagcg caaggaggag gagctcaagt tcaaggaggt gggcgaggcg tacgccatac   1740
tgtcggatgc tcacaagaag tcgcgctacg acagcggcca ggatatcgag gagcaggagc   1800
aagccgactt cgatccgaat caaatgttcc gcacattctt ccaattcaac ggcggtggcc   1860
ggaataattc atcgttcaac tttgagttct aggatcccaa cgagtgttgt tcaccaccac   1920
agagaagaag accatctcaa tcccatactt tctgcctcat ccgaaaccaa catacagcag   1980
cgcacaaatt ttgaactctt ttacatattt ctttttccaaa aagcaagaaa ataccacatt   2040
ttgattatgt taacgaatga atatatgcca agttatttga aaaaatattc taaatcaaaa   2100
taatgcaact aaatttccag tgtaagttca cattttttaaa tgttctttct tggattttttt   2160
tttcggcaac attaataaat catgggagat ttgtgttaaa taaacagaaa tatacatata   2220
aaaaaaaaaa aaaaaaaaa                                                 2239

<210> 3
<211> 273
<212> PRT
<213> Drosophila

<400> 3
Met Ser Leu Phe Gly Ala Leu Met Gly Asp Phe Asp Asp Asp Leu Gly
1               5                   10                  15
Leu Met Asn Asn His Met Asn His Thr Met Asn Ala Met Asn Met Gln
            20                  25                  30
Met Arg Ser Met Asn Arg Leu Met Asn Ser Phe Met Pro Asp Pro Phe
        35                  40                  45
Met Gln Val Ser Pro Phe Asp Gln Gly Phe Gln Gln Asn Ala Leu Met
    50                  55                  60
Glu Arg Pro Gln Met Pro Ala Met Pro Ala Met Gly Leu Phe Gly Met
65                  70                  75                  80
Pro Met Met Pro Asn Phe Asn Arg Leu Leu Asn Ala Asp Ile Gly Gly
                85                  90                  95
Asn Ser Gly Ala Ser Phe Cys Gln Ser Thr Val Met Thr Met Ser Ser
            100                 105                 110
Gly Pro Asp Gly Arg Pro Gln Ile Tyr Gln Ala Ser Thr Ser Thr Lys
            115                 120                 125
Thr Gly Pro Gly Gly Val Arg Glu Thr Arg Arg Thr Val Gln Asp Ser
    130                 135                 140
Arg Thr Gly Val Lys Lys Met Ala Ile Gly His His Ile Gly Glu Arg
145                 150                 155                 160
Ala His Ile Ile Glu Lys Glu Gln Asp Met Arg Ser Gly Gln Leu Glu
                165                 170                 175
Glu Arg Gln Glu Phe Ile Asn Leu Glu Glu Gly Glu Ala Glu Gln Phe
            180                 185                 190
Asp Arg Glu Phe Thr Ser Arg Ala Ser Arg Gly Ala Val Gln Ser Arg
            195                 200                 205
His His Ala Gly Gly Met Gln Ala Ile Met Pro Ala Arg Pro Ala Ala
    210                 215                 220
His Thr Ser Thr Leu Thr Ile Glu Pro Val Glu Asp Asp Asp Asp Asp
225                 230                 235                 240
```

3

```
Asp Asp Asp Cys Val Ile Gln Glu Gln Gln Pro Val Arg Ser Ser Ala
                245                 250                 255
Gly Arg His Tyr Ser Ser Ala Pro Thr Ala Pro Gln Asn Arg Tyr Asn
                260                 265                 270
Tyr
```

<210> 4
<211> 1753
<212> DNA
<213> Drosophila

<400> 4
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ggcacgagga aaatattcgt gaaaattctg catacggaaa gaagaaaatt cgagcaacag    60
aaagccaaca caatccacaa aaatgtcttt attcggagcg ttgatgggtg atttcgacga   120
cgatctcggc cttatgaaca accacatgaa ccacactatg aacgcgatga acatgcagat   180
gcgctcgatg aatcgcctga tgaacagctt tatgcccgat cccttcatgc aggtctcgcc   240
cttttgaccag ggattccagc agaacgctct catggagcgt ccgcagatgc cggccatgcc   300
agccatgggc ctcttcggca tgcccatgat gccaaacttt aatcgcctgt tgaacgctga   360
tattggtggc aattcaggcg catccttctg ccagagcacc gtgatgacca tgtcatcggg   420
tcccgatggg cgtcctcaga tctaccaggc cagcactagt accaaaacag gaccgggagg   480
cgttcgtgag acccgcagga cggtgcagga ctcgcgcact ggggtgaaga agatggccat   540
tggtcatcac atcggcgagc gggcacacat tattgagaaa gagcaggaca tgcgctcagg   600
acaactggag gagcgccagg agttcattaa tctggaggag ggagaagccg agcagtttga   660
cagggagttt acatcgcgcg ctagtcgcgg agcggtgcag tcaagacatc atgctggtgg   720
catgcaggcc atcatgcccg cccgtccagc ggcacacacc tcgacgttga ccattgagcc   780
agtggaggac gacgacgacg atgatgatga ctgtgtaatc caggagcagc aaccggttcg   840
ctcctccgcg ggccgccatt attccagtgc gccaacggca ccgcagaaca gatataatta   900
ctaaatctaa agtcaataca gtatatttta ctaactatcc gataaaacag aaacagaatt   960
gcatactata aatttctgct aattacattc ccaactgcgt tcaaacgaaa cgaatatcga  1020
atcgaaatca tagaatgcac agagcagcat acatccacat ccctatgccg ccaatccgag  1080
gcgccaacaa cgtgccgtaa aacattttca cacggaggac gaagcggcca gctcctacaa  1140
ggcggtcaag cgcggcaaga agaagtagta gaaacgtgat catctgtatg ccaacatctt  1200
ccgcatcgca cactcaaaaa cactaggaag caaagcgttg ggttctgttc catagcagga  1260
aaaccaattc aaatatttt taacaaacac aattctttac cagttctgtc ttatcctgcg  , 1320
tgagtcgacc agaatgcaac actaaaaaat gtacaacttc aagatgctat tgatgtgcac  1380
gcaggataca gaacaacttg cttaaattta cttaaaacaa atgtgactat tcaacgccga  1440
aatcattaca acacacactc tcagacctaa tcgaaaaatt caatgaaagt aatggaatat  1500
atatgaaatc gtaattataa gtttgaatta tttgattaat tctcaagttt ttagattttg  1560
ttagccacta agctttaaat tatggatgcc agttagcgtg caaatgaaca caattgattt  1620
gaaggctccg aacgatagaa aacaacaatt accaattccc caaatacatg taattcgtaa  1680
ggcctaagta aatgttaacg tgaatttaat taaatggtaa ttacattata atagtaaaaa  1740
aaaaaaaaaa aaa                                                     1753
```

<210> 5
<211> 484
<212> PRT
<213> Human

<400> 5
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Met Ala Ala Thr Glu Pro Glu Leu Leu Asp Asp Gln Glu Ala Lys Arg
  1               5                  10                  15
Glu Ala Glu Thr Phe Lys Glu Gln Gly Asn Ala Tyr Tyr Ala Lys Lys
                20                  25                  30
Asp Tyr Asn Glu Ala Tyr Asn Tyr Tyr Thr Lys Ala Ile Asp Met Cys
            35                  40                  45
Pro Lys Asn Ala Ser Tyr Tyr Gly Asn Arg Ala Ala Thr Leu Met Met
        50                  55                  60
Leu Gly Arg Phe Arg Glu Ala Leu Gly Asp Ala Gln Gln Ser Val Arg
65                  70                  75                  80
Leu Asp Asp Ser Phe Val Arg Gly His Leu Arg Glu Gly Lys Cys His
```

```
                    85                      90                      95
Leu Ser Leu Gly Asn Ala Met Ala Ala Cys Arg Ser Phe Gln Arg Ala
             100                     105                     110
Leu Glu Leu Asp His Lys Asn Ala Gln Ala Gln Gln Glu Phe Lys Asn
         115                     120                     125
Ala Asn Ala Val Met Glu Tyr Glu Lys Ile Ala Glu Thr Asp Phe Glu
     130                     135                     140
Lys Arg Asp Phe Arg Lys Val Val Phe Cys Met Asp Arg Ala Leu Glu
145                     150                     155                     160
Phe Ala Pro Ala Cys His Arg Phe Lys Ile Leu Lys Ala Glu Cys Leu
             165                     170                     175
Ala Met Leu Gly Arg Tyr Pro Glu Ala Gln Ser Val Ala Ser Asp Ile
             180                     185                     190
Leu Arg Met Asp Ser Thr Asn Ala Asp Ala Leu Tyr Val Arg Gly Leu
         195                     200                     205
Cys Leu Tyr Tyr Glu Asp Cys Ile Glu Lys Ala Val Gln Phe Phe Val
     210                     215                     220
Gln Ala Leu Arg Met Ala Pro Asp His Glu Lys Ala Cys Ile Ala Cys
225                     230                     235                     240
Arg Asn Ala Lys Ala Leu Lys Ala Lys Lys Glu Asp Gly Asn Lys Ala
             245                     250                     255
Phe Lys Glu Gly Asn Tyr Lys Leu Ala Tyr Glu Leu Tyr Thr Glu Ala
         260                     265                     270
Leu Gly Ile Asp Pro Asn Asn Ile Lys Thr Asn Ala Lys Leu Tyr Cys
     275                     280                     285
Asn Arg Gly Thr Val Asn Ser Lys Leu Arg Lys Leu Asp Asp Ala Ile
     290                     295                     300
Glu Asp Cys Thr Asn Ala Val Lys Leu Asp Asp Thr Tyr Ile Lys Ala
305                     310                     315                     320
Tyr Leu Arg Arg Ala Gln Cys Tyr Met Asp Thr Glu Gln Tyr Glu Glu
             325                     330                     335
Ala Val Arg Asp Tyr Glu Lys Val Tyr Gln Thr Glu Lys Thr Lys Glu
             340                     345                     350
His Lys Gln Leu Leu Lys Asn Ala Gln Leu Glu Leu Lys Lys Ser Lys
         355                     360                     365
Arg Lys Asp Tyr Tyr Lys Ile Leu Gly Val Asp Lys Asn Ala Ser Glu
     370                     375                     380
Asp Glu Ile Lys Lys Ala Tyr Arg Lys Arg Ala Leu Met His His Pro
385                     390                     395                     400
Asp Arg His Ser Gly Ala Ser Ala Glu Val Gln Lys Glu Glu Glu Lys
             405                     410                     415
Lys Phe Lys Glu Val Gly Glu Ala Phe Thr Ile Leu Ser Asp Pro Lys
             420                     425                     430
Lys Lys Thr Arg Tyr Asp Ser Gly Gln Asp Leu Asp Glu Glu Gly Met
         435                     440                     445
Asn Met Gly Asp Phe Asp Pro Asn Asn Ile Phe Lys Ala Phe Phe Gly
     450                     455                     460
Gly Pro Gly Gly Phe Ser Phe Glu Ala Ser Gly Pro Gly Asn Phe Phe
465                     470                     475                     480
Phe Gln Phe Gly


<210> 6
<211> 1756
<212> DNA
<213> Human

<400> 6
cggctgccgc ggagtgcgat gtggtaatgg cggcgaccga gccggagctg ctcgacgacc    60
aagaggcgaa gagggaagca gagactttca aggaacaagg aaatgcatac tatgccaaga   120
aagattacaa tgaagcttat aattattata caaaagccat agatatgtgt cctaaaaatg   180
```

5

```
ctagctatta tggtaatcga gcagccacct tgatgatgct tggaaggttc cgggaagctc    240
ttggagatgc acaacagtca gtgaggttgg atgacagttt tgtccgggga catctacgag    300
agggcaagtg ccacctctct ctggggaatg ccatggcagc atgtcgcagc ttccagagag    360
ccctagaact ggatcataaa aatgctcagg cacaacaaga gttcaagaat gctaatgcag    420
tcatggaata tgagaaaata gcagaaacag attttgagaa gcgagatttt cggaaggttg    480
ttttctgcat ggaccgtgcc ctagaatttg cccctgcctg ccatcgcttc aaaatcctca    540
aggcagaatg tttagcaatg ctgggtcgtt atccggaagc acagtctgtg gctagtgaca    600
ttctacgaat ggattccacc aatgcagatg ctctgtatgt acgaggtctt tgcctttatt    660
acgaagattg tattgagaag gcagttcagt ttttcgtaca ggctctcagg atggctcctg    720
accacgagaa ggcctgcatt gcctgcagaa atgccaaagc actcaaagca aagaaagaag    780
atgggaataa agcatttaag gaaggaaatt acaaactagc atatgaactg tacacagaag    840
ccctggggat agaccccaac aatataaaaa caaatgctaa actctactgt aatcggggta    900
cggttaattc caagcttagg aaactagatg atgcaataga agactgcaca aatgcagtga    960
agcttgatga cacttacata aaagcctact tgagaagagc tcagtgttac atggacacag   1020
aacagtatga agaagcagta cgagactatg aaaaagtata ccagacagag aaaacaaaag   1080
aacacaaaca gctcctaaaa aatgcgcagc tggaactgaa gaagagtaag aggaaagatt   1140
actacaagat tctaggagtg gacaagaatg cctctgagga cgagatcaag aaagcttatc   1200
ggaaacgggc cttgatgcac catccagatc ggcatagtgg agccagtgct gaggttcaga   1260
aggaggagga gaagaagttc aaggaagttg gagaggcctt tactatcctc tctgatccca   1320
agaaaaagac tcgctatgac agtggacagg acctagatga ggagggcatg aatatgggtg   1380
attttgatcc aaacaatatc ttcaaggcat ctttggcgg tcctggcggc ttcagctttg   1440
aagcatctgg tccagggaat ttcttttttc aatttggcta atgaaggca ccacccaga   1500
acccagaaaa tgcagattca ctcagtttaa tcttgaatgt ggaaacagtt cacctcctcc   1560
cttcatcacg tctccgtgtg cttagagcag tttcgttttc tcagttggat gccctgtgtc   1620
tctgtgagtg gggtggagca aagggaacca atgccgaaga ccgagggcag gggagggagg   1680
cggggtgga cagggaggca gcttgtgaat ttttgtttta ctgtttaact ttattaaaaa   1740
agaaaaaaa aaaaa                                                     1756
```

<210> 7
<211> 268
<212> PRT
<213> Human

<400> 7

```
Met Phe Arg Met Leu Asn Ser Ser Phe Glu Asp Asp Pro Phe Phe Ser
 1               5                  10                  15
Glu Ser Ile Leu Ala His Arg Glu Asn Met Arg Gln Met Ile Arg Ser
               20                  25                  30
Phe Ser Glu Pro Phe Gly Arg Asp Leu Leu Ser Ile Ser Asp Gly Arg
            35                  40                  45
Gly Arg Ala His Asn Arg Arg Gly His Asn Asp Gly Glu Asp Ser Leu
         50                  55                  60
Thr His Thr Asp Val Ser Ser Phe Gln Thr Met Asp Gln Met Val Ser
65                  70                  75                  80
Asn Met Arg Asn Tyr Met Gln Lys Leu Glu Arg Asn Phe Gly Gln Leu
                85                  90                  95
Ser Val Asp Pro Asn Gly His Ser Phe Cys Ser Ser Ser Val Met Thr
               100                 105                 110
Tyr Ser Lys Ile Gly Asp Glu Pro Pro Lys Val Phe Gln Ala Ser Thr
            115                 120                 125
Gln Thr Arg Arg Ala Pro Gly Gly Ile Lys Glu Thr Arg Lys Ala Met
         130                 135                 140
Arg Asp Ser Asp Ser Gly Leu Glu Lys Met Ala Ile Gly His His Ile
145                 150                 155                 160
His Asp Arg Ala His Val Ile Lys Lys Ser Lys Asn Lys Lys Thr Gly
               165                 170                 175
Asp Glu Glu Val Asn Gln Glu Phe Ile Asn Met Asn Glu Ser Asp Ala
               180                 185                 190
His Ala Phe Asp Glu Glu Trp Gln Ser Glu Val Leu Lys Tyr Lys Pro
            195                 200                 205
Gly Arg His Asn Leu Gly Asn Thr Arg Met Arg Ser Val Gly His Glu
```

6

```
      210                   215                   220
Asn Pro Gly Ser Arg Glu Leu Lys Arg Arg Glu Lys Pro Gln Gln Ser
225                   230                   235                   240
Pro Ala Ile Glu His Gly Arg Arg Ser Asn Val Leu Gly Asp Lys Leu
                  245                   250                   255
His Ile Lys Gly Ser Ser Val Lys Ser Asn Lys Lys
                  260                   265
```

<210> 8
<211> 1116
<212> DNA
<213> Human

<400> 8
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gttatgtgtt cccgtccgta ctggaggcta gctcttgtcg cggccgcggc gagttaacat     60
cgttttttcca atctgtccgc ggctgccgcc acccaagaca gagccagaat gttcaggatg    120
ctgaacagca gttttgagga tgaccccttc ttctctgagt ccattcttgc acaccgagaa    180
aatatgcgac agatgataag aagttttttct gaaccctttg aagagactt gctcagtatc    240
tctgatggta gagggagagc tcataatcgt agaggacata atgatggtga agattctttg    300
actcatacag atgtcagctc tttccagacc atggaccaaa tggtgtcaaa tatgagaaac    360
tatatgcaga aattagaaag aaacttcggt caactttcag tggatccaaa tggacattca    420
ttttgttctt cctcagttat gacttattcc aaaataggag atgaaccgcc aaaggttttt    480
caggcctcaa ctcaaactcg tcgagctcca ggaggaataa aggaaaccag gaaagcaatg    540
agagattctg acagtggact agaaaaaatg gctattggtc atcatatcca tgaccgagct    600
catgtcatta aaaagtcaaa gaacaagaag actggagatg aagaggtcaa ccaggagttc    660
atcaatatga atgaaagcga tgctcatgct tttgatgagg agtggcaaag tgaggttttg    720
aagtacaaac caggacgaca caatctagga aacactagaa tgagaagtgt tggccatgag    780
aatcctggct cccgagaact taaaagaagg gagaaacctc aacaaagtcc agccattgaa    840
catggaagga gatcaaatgt tttgggggac aaactccaca tcaaaggctc atctgtgaaa    900
agcaacaaaa aataaatagc catgcatttg atttgtttag ttttgattgt tttaacagtt    960
agtaatggtg ctgggtaata agcataagac caatctcttg ctgttaaatc agttctgtcc   1020
ttggcaactt tcttctgata tctgaatgtt catgaaggtc ctagctttat attgtccctc   1080
ttttaggaat aaaattttga ttttcaacaa aaaaaa                             1116
```

<210> 9
<211> 24333
<212> DNA
<213> Drosophila

<400> 9
```
ttacggttta tttactatta ctctagttaa tcaaataaac tgtataattc ctggcttgta     60
caataatttt gctaacacgc cgatgcgttc gatctttttt tttaccgctc tccgtcgtat    120
tcatcatggt acatattaca tccaacatac tttattttt ttgggttatt aacattggca    180
atatcgctgc tcgccgccgt tcggttatgc tctataaata aaaggggggc gccgctaaaa    240
ttataataaa attttcatgg gtcctaaatc tagtctcgaa atctatgtac aaagtttgct    300
tgcatgctgg ttaggcatag gttcttaacg tattattggg ttgctttatt ccattctgc    360
gcagttgtgc agcctgttta gtgtttgcct ttacggggtt aacatttttt aaaaatgaaa    420
cattagagcg gtaaccttgt tgtctgatta ttggcgtcat taaagcggta tcgccagcac    480
gcgattgatg caaggatacc gattcaatga aataaaaacg aattcagcca aacacaatct    540
ttcatttctt ttttttatc gtacttaatg atagccttag tttctaatgg gactgtgtgc    600
ttcggtgaag gttggggatg attttgggag gcaacaatta tgttctagct tatagcttac    660
agtcctacgc ctactcctat ttctaatatg ttcatcatca gcagttaaaa aacgtttaca    720
aaactcatgc gaaattgaaa tccaataaca aatgcacacg ccgcagtcgc atcggcgtca    780
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18

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aaaacgtaaa agcaaatcaa accgttcaca aatggagctc cagtaactcg cacatcagtc    8340
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<210> 12
<211> 165
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic DNA

<400> 12
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ccccagcagc agcaacagca gcagcaacag caacagcagc agcaacaaca gcagcagcaa    120
cagactagtc gtacgtatcc ctatgacgtg cccgactatg cgtag                    165
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<210> 13
<211> 486
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic DNA

<400> 13
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ccccagcagc agcaacagca gcagcaacag caacagcagc agcaacaaca gcagcagcaa    120
cagcaacagc agcagcaaca acagcagcag caacagcaac agcagcagca acagcagcag    180
caacagcaac agcagcagca acaacagcag cagcaacagc aacagcagca gcaacaacag    240
caacaacaac agcaacagca gcagcaacag cagcagcaac agcaacagca gcagcaacaa    300
cagcagcagc aacagcaaca gcagcagcaa caacagcagc agcaacagca acagcagcag    360
caacagcagc agcaacagca acagcagcag caacaacagc agctgcaaca gcaacagcag    420
cagcaacaac agcagcagca acagactagt cgtacgtatc cctatgacgt gcccgactat    480
gcgtag                                                               486
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<210> 14
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Polypeptide

<400> 14
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 1   5   10   15
Val Pro Asp Tyr Ala
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<210> 15
<211> 148
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Polypeptide

<400> 15
Met Gly Gly Pro Pro Ser Thr Pro Gln Gln Gln Gln Gln Gln Gln Gln
 1   5   10   15
Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
            20   25   30
Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
         35   40   45
Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
      50   55   60
Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
65   70   75   80
Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
            85   90   95
Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
            100   105   110
Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
         115   120   125
Gln Gln Gln Gln Gln Gln Gln Thr Ser Arg Thr Tyr Pro Tyr Asp Val
      130   135   140
Pro Asp Tyr Ala
145

<210> 16
<211> 582
<212> DNA
<213> Drosophila

<220>
<221> misc_feature
<222> (1)...(582)
<223> n = A,T,C or G

<400> 16
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gtttaaaaac taaataggca actaaaaggg aagccgcagc gaataaagtg atttgctgaa   120
agagacgtaa gaaagttaat cgcatcgaag gcaccagaaa tcggggattt ctaacacggc   180
gcgcgtgcga cgtacataca tacgcaagcg cacacacaca cgaacaatta cttgccattg   240
acgcaaaagc gaaaaagcag tggaataaaa gggggaattg acaaataaca acgttttgca   300
agcactggac tctggtcgct ggtgttcttt cattttgtaa ttgccacgca tggacgacga   360
agtaattgaa attagcgaca cgnnacgcga agaaacctca tcgaactccg aaatggatgt   420
ggaaataacg acagaacagc caaccatcga tgtcaaagca gagcaaattg tgcccaagga   480
cgcggcaacc attgccgagg agaagaagaa actgggcaac gaccaataca aggcgcagaa   540
ctatcagaat gcactcaagc tctacacgga tgccatatcg ct   582

21

<210> 17
<211> 274
<212> DNA
<213> Drosophila

<220>
<221> misc_feature
<222> (1)...(274)
<223> n = A,T,C or G

<400> 17
cttcgcatgg cacgcttttt tccgtgtgct cggttcgttc ggccatacaa aacacaaaat   60
tcaagtttaa aaactaaata ggcaactaaa agggaagccg cagcgaataa agtgatttgc   120
tgaaagagac gtaagaaagt taatcgcatc gaaggcacca gaaatcgggg atttctaaca   180
cggcgcgcgt gcgacgtaca tacatacgca agcgcacaca cacgaaca attacttgcc   240
attgacgcan aagcgaaaag cagtgaaata aagg   274

<210> 18
<211> 565
<212> DNA
<213> Drosophila

<400> 18
cttcgcatgg cacgctttt tccgtgtgct cggttcgttc ggccatacaa aacacaaaat   60
tcaagtttaa aaactaaata ggcaactaaa agggaagccg cagcgaataa agtgatttgc   120
tgaaagagac gtaagaaagt taatcgcatc gaaggcacca gaaatcgggg atttctaaca   180
cggcgcgcgt gcgacgtaca tacatacgca agcgcacaca cacgaaca attacttgcc   240
attgacgcaa aagcgaaaaa gcagtggaat aaagggaat tgacaaataa caacgttttg   300
caagcactgg actctggtcg ctggtgttct ttcattttgt aattgccacg catggacgac   360
gaagtaattg aaattagcga cagcgaacgc gaagaaacct catcgaactc cgaaatggat   420
gtggaaataa cgacagaaca gccaaccatc gatgtcaaag cagagcaaat tgtgcccaag   480
gacgcggcaa ccattgccga ggagaagaag aaactgggca acgaccaata caaggcgcag   540
aactatcaga atgcactcaa gctct   565

<210> 19
<211> 679
<212> DNA
<213> Drosophila

<220>
<221> misc_feature
<222> (1)...(679)
<223> n = A,T,C or G

<400> 19
ctacttcgca tggcacgctt ttttccgtgt gctcggttcg ttcggccata caaaacacaa   60
aattcaagtt taaaaactaa ataggcaact aaaagggaag ccgcagcgaa taaagtgatt   120
tgctgaaaga gacgtaagaa agttaatcgc atcgaaggca ccagaaatcg gggatttcta   180
acacggcgcg cgtgcgacgt acatacatac gcaagcgcac acacacga acaattactt   240
gccattgacg caaaagcgaa aaagcagtgg aataaagggg aattgacaaa taacaacgtt   300
ttgcaagcac tggactctgg tcgctggtgt tcttcattt tgtaattgcc acgcatggac   360
gacgaagtaa ttgaaattag cgacagcgaa cgcgaagaaa cctcatcgaa ctccgaaatg   420
gatgtggaaa taacgacaga acagccaacc atcgatgtca aagcagagca aattgtgccc   480
aaggacgcgg caaccattgc cgaggagaag aagaaactgg gcaacgacca atacaaggcg   540
cagaactatc agaatgcact caagctctac acggatgcca tatcgctgtg tccggactcg   600
gcggcatact atggcaatcg ggccgnctgc tacatgatgc tgctcaacta taatagcgcc   660
ctgaccgacg cccgacacg   679

<210> 20
<211> 529

22

<212> DNA
<213> Drosophila

<400> 20
actacttcgc atggcacgct tttttccgtg tgctcggttc gttcggccat acaaaacaca   60
aaattcaagt ttaaaaacta aataggcaac taaaagggaa gccgcagcga gataaagtga   120
tttgctgaaa gagacgtaag aaagttaatc gcatcgaagg caccagaaat cggggatttc   180
taacacggcg cgcgtgcacg tagcatacat acgcaagcgc acacacac gaacaattac   240
ttgccattga cgcaaaagcg aaaaagcagt ggaataaagg ggaattgaca aataacaacg   300
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acgacgaagt aattgaaatt agcgacagca tacgggatga aacctcatcg aactccgaaa   420
tggatgtgga aataacgaca gaacagccaa ccatcgatgt caaagcagag caaattgtgc   480
ccaaggacgc ggcaaccatt gccgaggaga agaagatact gggcaacga   529

<210> 21
<211> 783
<212> DNA
<213> Drosophila

<220>
<221> misc_feature
<222> (1)...(783)
<223> n = A,T,C or G

<400> 21
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aaaattcaag tttaaaaact aaataggcaa ctaaaaggga agccgcagcg aataaagtga   120
tttgctgaaa gagacgtaag aaagttaatc gcatcgaagg caccagaaat cggggatttc   180
taacacggcg cgcgtgcgac gtacatacat acgcaagcgc acacacac gaacaattac   240
ttgccattga cgcaaaagcg aaaaagcagt ggaataaagg ggaattgaca aataacaacg   300
ttttgcaagc actggactct ggtcgctggt gttctttcat tttgtaattg ccacgcatgg   360
acgacgaagt aattgaaatt agcgacacgn acgcgaagaa acctcatcga actccgaaat   420
ggatgtggaa ataacgacag aacagccaac catcgatgtc aaagcagagc aaattgtgcc   480
caaggacgcg gcaaccattg ccgaggagaa gaagaaactg ggcaacgacc aatacaaggc   540
gcagaactat cagaatgcac tcaagctcta cacggatgcc atatcgctgt gtccggactc   600
ggcggcatac tatggcaatc gggccgcctg ctacatgatg ctgctcaact ataatagcgc   660
cctgaccgac gcccgacacg ccatacgcat cgatccgggc ttcgagaagg cctacgtccg   720
tgtggccaag tgctgtctgg ccctgggcga cattattggc ccgaacaggc cgtcaaaatg   780
gtt   783

<210> 22
<211> 677
<212> DNA
<213> Drosophila

<400> 22
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aaacacaaaa ttcaagttta aaaactaaat gggcaactaa aagggaagcc gcagcgaata   120
aagtgatttg ctgaaagaga cgtaagaaag ttaatcgcat cgaaggcacc agaaatcggg   180
gatttctaac acggcgcgcg tgcgacgtac atacatacgc aagcgcacac acacgaac   240
aattacttgc cattgacgca aaagcgaaaa agcagtggaa taaagggaa ttgacaaata   300
acaacgtttt gcaagcactg gactctggtc gctggtgttc tttcattttg taattgccac   360
gcatggacga cgaagtaatt gaaattagcg acagcgaacg cgaagaaacc tcatcgaact   420
ccgaaatgga tgtggaaata acgacagaac agccaaccat cgatgtcaaa gcagagcaaa   480
ttgtgcccaa ggacgcggca accattgccg aggagaagaa gaaactgggc aacgaccaat   540
acaaggcgca gaactatcag aatgcactca agctctacac ggatgccata tcgctgtgtc   600
cggactcggc ggcatactat ggcaatcggg ccgcctgcta catgatgctg ctcaactata   660
atagcgccct gaccgac   677

<210> 23
<211> 386

<212> DNA
<213> Drosophila

<400> 23
aactacttcg catggcacgc ttttttccgt gtgctcggtt cgttcggcca tacaaaacac   60
aaaattcaag tttaaaaact aaataggcaa ctaaaaggga agccgcagcg aataaagtga   120
tttgctgaaa gagacgtaag aaagttaatc gcatcgaagg caccagaaat cggggatttc   180
taacacggcg cgcgtgcgac gtacatacat acgcaagcgc acacacacg gaacaattac   240
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acgacgaagt aattgaaatt agcgac   386

<210> 24
<211> 537
<212> DNA
<213> Drosophila

<220>
<221> misc_feature
<222> (1)...(537)
<223> n = A,T,C or G

<400> 24
tttaacacaa atctcccatg atttattaat gttgccgaaa aaaaaatcca agaaagaaca   60
tttaaaaatg tgaacttaca ctggaaattt agttgcatta ttttgattta gaatattttt   120
tcaaataact tggcatatat tcattcgtta acataatcan aatgtggtat tttcttgctt   180
tttggaaaag anatatgtan aagagttcaa aatttgtgcg ctgctgtatg ttggtttcgg   240
atgaggcaga aagtatggga ttgagatggt cttcttctct gtggtggtga acaacactcg   300
ttgggatcct agaactcaaa gttgaacgat gaattattcc ggccaccgcc gttgaattgg   360
aagaatgtgc ggaacatttg attcggatcg aagtcggctt gctcctgctc ctcgatatcc   420
tggccgctgt cgtagcgcga cttcttgtga gcatccgaca gtatggcgta cgcctcgccc   480
acctccttga acttgagctc ctcctccttg cgctcctcgg cactgctgtt tgcgtgt   537

<210> 25
<211> 570
<212> DNA
<213> Drosophila

<220>
<221> misc_feature
<222> (1)...(570)
<223> n = A,T,C or G

<400> 25
ttttttccgtg tgctcggttc gttcggccat acaaaacaca aaattcaagt ttaaaaacta   60
aataggcaac taaaagggaa gccgcagcga ataaagtgat ttgctgaaag agacgtaaga   120
aagttaatcg catcgaaggc accagaaatc ggggatttct aacacggcgc gcgtgcgacg   180
tacatacata cgcaagcgca cacacacg aacaattact tgccattgac gcaaaagcga   240
aaaagcagtg gaataaaggg gaattgacaa ataacaacgt tttgcaagca ctggactctg   300
gtcgctggtg ttctttcatt ttgtaattgc cacgcatgga cgacgaagta attgaaatta   360
gcgacagcac cgcgcagaaa cctcatcgaa ctccgaaatg gatgtggaaa taacgacaga   420
acagccaacc atcgatgtca aagcagagca nattgtgctc aaggacgcgg caaccattgc   480
cgaggagaag aagaaactgg gcaacgacca atacaaggcg cagaactatc agaatgcact   540
caagctctac acggatgcca tatcgctgtg   570

<210> 26
<211> 688
<212> DNA
<213> Drosophila

<400> 26

```
cttttttccg tgtgctcggt tcgttcggcc atacaaaaca caaaattcaa gtttaaaaac      60
taaataggca actaaaaggg aagccgcagc gaataaagtg atttgctgaa agagacgtaa     120
gaaagttaat cgcatcgaag gcaccagaaa tcggggattt ctaacacggc gcgcgtgcga     180
cgtacataca tacgcaagcg cacacacaca cgaacaatta cttgccattg acgcaaaagc     240
gaaaaagcag tggaataaag gggaattgac aaataacaac gttttgcaag cactggactc     300
tggtcgctgg tgttctttca ttttgtaatt gccacgcatg gacgacgaag taattgaaat     360
tagcgacagc gaacgcgaag aaacctcatc gaactccgaa atggatgtgg aaataacgac     420
agaacagcca accatcgatg tcaaagcaga gcaaattgtg cccaaggacg cggcaaccat     480
tgccgaggag aagaagaaac tgggcaacga ccaatacaag gcgcagaact atcagaatgc     540
actcaagctc tacacggatg ccatatcgct gtgtccggac tcggcggcat actatggcaa     600
tcgggccgcc tgctacatga tgctgctcaa ctataatagc gccctgaccg acgcccgaca     660
cgccatacgc atcgatccgg gcttcgag                                       688

<210> 27
<211> 531
<212> DNA
<213> Drosophila

<400> 27
cttttttccg tgtgctcggt tcgttcggcc atacaaaaca caaaattcaa gtttaaaaac      60
taaataggca actaaaaggg aagccgcagc gaataaagtg atttgctgaa agagacgtaa     120
gaaagttaat cgcatcgaag gcaccagaaa tcggggattt ctaacacggc gcgcgtgcga     180
cgtacataca tacgcaagcg cacacacaca cgaacaatta cttgccattg acgcaaaagc     240
gaaaaagcag tggaataaag gggaattgac aaataacaac gttttgcaag cactggactc     300
tggtcgctgg tgttctttca ttttgtaatt gccacgcatg gacgacgaag taattgaaat     360
tagcgacagc gaacgcgaag aaacctcatc gaactccgaa atggatgtgg aaataacgac     420
cgaacagcca accatcgatg tcaaagcaaa acaaattgtg cccaaggacg cggcaaccat     480
tgccgaggag aagaagaaac tgggctacga ccaatacaag gcgcagaact a             531

<210> 28
<211> 479
<212> DNA
<213> Drosophila

<400> 28
cttttttccg tgtgctcggt tcgttcggcc atacaaaaca caaaattcaa gtttaaaaac      60
taaataggca actaaaaggg aagccgcagc gaataaagtg atttgctgaa agagacgtaa     120
gaaagttaat cgcatcgaag gcaccagaaa tcggggattt ctaacacggc gcgcgtgcga     180
cgtacataca tacgcaagcg cacacacaca cgaacaatta cttgccattg acgcaaaagc     240
gaaaaagcag tggaataaag gggaattgac aaataacaac gttttgcaag cactggactc     300
tggtcgctgg tgttctttca ttttgtaatt gccacgcatg gacgacgaag taattgaaat     360
tagcgacagc ggacgcgaag aaacctcatc gaactccgaa atggatgtgg aaataacgac     420
agaacagcca accatcgatg tcaaagcaga gcaaattgtg ccccaggacg cggcaacca     479

<210> 29
<211> 367
<212> DNA
<213> Drosophila

<400> 29
cttttttccg tgtgctcggt tcgttcggcc atacaaaaca caaaattcaa gtttaaaaac      60
taaataggca actaaaaggg aagccgcagc gaataaagtg atttgctgaa agagacgtaa     120
gaaagttaat cgcatcgaag gcaccagaaa tcggggattt ctaacacggc gcgcgtgcga     180
cgtacataca tacgcaagcg cacacacaca cgaacaatta cttgccattg acgcaaaagc     240
gaaaaagcag tggaataaag gggaattgac aaataacaac gttttgcaag cactggactc     300
tggtcgctgg tgttctttca ttttgtaatt gccacgcatg gacgacgaag taattgaaat     360
tagcgac                                                              367

<210> 30
<211> 506
<212> DNA
```

<213> Drosophila

<220>
<221> misc_feature
<222> (1)...(506)
<223> n = A,T,C or G

<400> 30
acgctttttt ccgtgtgctc ggttcgttcg gccatacaaa acacaaaatt caagtttaaa   60
aactaaatag gcaactaaaa gggaagccgc aggananaaa gtgatttgct gaaagagacg   120
taagaaagtt aatcgcatcg aaggcaccag aaatcgggga tttctaacac ggcgcgcgtg   180
gacgtacata catacgcaag cggcacacac acacgaacaa ttacttgcca ttgacgcaaa   240
agcgaaaaag cagtggaata aaggggaatt gacaaataac aacgttttgc aagcactgga   300
ctctggtcgc tggtgttctt tcattttgta attgccacgc atggacgacg aagtaattga   360
aattagcgac aggancgcgn agaaacctca tcgaactccg aaatggatgt ggaaataacg   420
acagaacagc caaccatcga tgtcaaagca gagcaaattg tgcccaagga cgcggcaacc   480
attgccgagg agaagaagaa actggg   506

<210> 31
<211> 370
<212> DNA
<213> Drosophila

<400> 31
gcacgctttt ttccgtgtgc tcggttcgtt cggccataca aaacacaaaa ttcaagttta   60
aaaactaaat aggcaactaa aagggaagcc gcagcgaata aagtgatttg ctgaaagaga   120
cgtaagaaag ttaatcgcat cgaaggcacc agaaatcggg gatttctaac acggcgcgcg   180
tgcgacgtac atacatacgc aagcgcacac acacacgaac aattacttgc cattgacgca   240
aaagcgaaaa agcagtggaa taaaggggaa ttgacaaata caacgttttg caagcactg   300
gactctggtc gctggtgttc tttcattttg taattgccac gcatggacga cgaataattg   360
aaattagcga   370

<210> 32
<211> 377
<212> DNA
<213> Drosophila

<400> 32
cacgctttttt tccgtgtgct cggttcgttc ggccatacaa aacacaaaat tcaagtttaa   60
aaactaaata ggcaactaaa agggaagccg cagcgaataa agtgatttgc tgaaagagac   120
gtaagaaagt taatcgcatc gaaggcacca gaaatcgggg atttctaaca cggcgcgcgt   180
gcgacgtaca tacatacgca agcgcacaca cacacgaaca attacttgcc attgacgcaa   240
aagcgaaaaa gcagtggaat aaaggggaat tgacaaataa caacgttttg caagcactgg   300
actctggtcg ctggtgttct ttcattttgt aattgccacg catggacgac gaagtaattg   360
agattagcga ccgcatc   377

<210> 33
<211> 691
<212> DNA
<213> Drosophila

<400> 33
catggcacgc ttttttccgt gtgctcggtt cgttcggcca tacaaaacac aaaattcaag   60
tttaaaaact aaataggcaa ctaaaaggga gccgcagcg aataaagtga tttgctgaaa   120
gagacgtaag aaagttaatc gcatcgaagg caccagaaat cggggatttc taacacggcg   180
cgcgtgcgac gtacatacat acgcaagcgc acacacacac gaacaattac ttgccattga   240
cgcaaaagcg aaaaagcagt ggaataaagg ggaattgaca ataacaacg ttttgcaagc   300
actggactct ggtcgctggt gttctttcat tttgtaattg ccacgcatgg acgacgaagt   360
aattgaaatt agcgacagcg aacgcgaaga aacctcatcg aactccgaaa tggatgtgga   420
aataacgaca gaacagccaa ccatcgatgt caaagcagag caaattgtgc ccaaggacgc   480
ggcaaccatt gccgaggaga agaagaaact gggcaacgac caatacaagg cgcagaacta   540

26

```
tcagaatgca ctcaagctct acacggatgc catatcgctg tgtccggact cggcggcata      600
ctatggcaat cgggccgcct gctacatgat gctgctcaac tataatagcg ccctgaccga      660
cgcccgacac gccatacgca tcgatccggg c                                     691


<210> 34
<211> 635
<212> DNA
<213> Drosophila

<400> 34
gcacgctttt ttccgtgtgc tcggttcgtt cggccataca aaacacaaaa ttcaagttta       60
aaaactaaat aggcaactaa aagggaagcc gcagcgacat aaagtgattt gctgaaagag      120
acgtaagaaa gttaatcgca tcgaaggcac cagaaatcgg ggatttctaa cacggcgcgc      180
gtggacgtac atacatacgc aagcgcacac acacacgaac aattacttgc cattgacgca      240
aaagcaaaaa gcagtggaat aaagggaat tgacaaataa caacgttttg caagcactgg      300
actctggtcg ctggtgttct ttcattttgt aattgccacg catggacgac gaagtaattg      360
aaattagcga cagtaccgcg cagaaacctc atcgaactcc gaaatggatg tggaaataac      420
gacagaacag ccaaccatcg atgtcaaagc agagcaaatt gtgcccaagg acgcggcaac      480
cattgccgag gagaagaaga aactgggcaa cgaccaatac aaggcgcaga actatcagaa      540
tgcactcaag ctctacacgg atgccatatc gctgtgtccg gactcggcgg catactatgg      600
caatcgggcc gcctgctaca tgatgctgct caact                                635


<210> 35
<211> 589
<212> DNA
<213> Drosophila

<220>
<221> misc_feature
<222> (1)...(589)
<223> n = A,T,C or G

<400> 35
gcatggcacg cttttttccg tgtgctcggt tcgttcggcc atacaaaaca caaaattcaa       60
gtttaaaaac taaataggca actaaaaggg aagccgcagc gaataaagtg atttgctgaa      120
agagacgtaa gaaagttaat cgcatcgaag gcaccagaaa tcggggattt ctaacacggc      180
gcgcgtgcga cgtacataca tacgcaagcg cacacacaca cgaacaatta cttgccattg      240
acgcaaaagc gaaaaagcag tggaataaag gggaattgac aaataacaac gttttgcaag      300
cactggactc tggtcgctgg tgttctttca ttttgtaatt gccacgcatg gacgacgaag      360
taattgaaat tagcgacagc anacgcgaag aaacctcatc gaactccgaa atggatgtgg      420
aaataacgac agaacagcca accatcgatg tcaaagcaga gcaaattgtg cccaaggacg      480
cggcaaccat tgccgaggag aagaagaaac tgggcaacga ccaatacaag gcgcagaact      540
atcagaatgc actcaagctc tacacggatg ccatatcgct gtgtccgga                 589


<210> 36
<211> 566
<212> DNA
<213> Drosophila

<220>
<221> misc_feature
<222> (1)...(566)
<223> n = A,T,C or G

<400> 36
atatgtatat ttctgtttat ttaacacaaa tctcccatga tttattaatg ttgccgaaaa       60
aaaaaatcca agaaagaaca tttaaaaatg tgaacttaca ctggaaattt agttgcatta      120
ttttgattta aaatatttttt tcaaataact tggcatatat tcattcgtta acataatcaa      180
aatgtggtat tttcttgctt tttggaaaag aaatatgtaa aagagttcaa aatttgtgcg      240
ctgctgtatg ttggtttcgg atgaggcaga aagtatggga ttgagatggt cttcttctct      300
gtggtggtga acaacactcg ttgggatcct agaactcaaa gttgaacgat gaattattcc      360
```

27

```
ggccaccgcc gttgaattgg aagaatgtgc ggaacatttg attcggatcg aagtcggctt      420
gctcctgctc ctcgatatcc tggccgctgt cgtancgcga cttcttgtga gcatccgaca      480
gtatggcgta cgcctcgccc acctccttga acttgagctc ctcctccttg cgctcctcgg      540
cactgctgtt tgcgtgtcga tccgga                                           566
```

<210> 37
<211> 589
<212> DNA
<213> Drosophila

<400> 37
```
aactatcaga atgcactcaa gctctacacg gatgccatat cgctgtgtcc ggactcggcg       60
gcatactatg gcaatcgggc cgcctgctac atgatgctgc tcaactataa tagcgccctg      120
accgacgccc gacacgccat acgcatcgat ccgggcttcg agaaggccta cgtccgtgtg      180
gccaagtgct gtctggccct gggcgacatt attggcaccg aacaggccgt caaaatggtc      240
aacgagctga attcgcttag cacggctgtt gctgccgaac agacggcggc gcaaaagttg      300
cgccaattgg aggccaccat tcaggcgaac tacgatacga aatcctatcg caatgtggtc      360
ttctatttgg atagtgcctt gaaattggcg cccgcctgtt tgaaatatcg tctactcaag      420
gctgagtgcc ttgcattttt ggggcgatgt gatgaggcct tggacattgc ggtcagtgta      480
atgaaactgg ataccacatc ggcggatgcg atatacgtga gaggtctgtg cctgtactac      540
acggacaacc tggacaaggg aattcttcat ttcgagcgcg ccctgaccc                 589
```

<210> 38
<211> 654
<212> DNA
<213> Drosophila

<220>
<221> misc_feature
<222> (1)...(654)
<223> n = A,T,C or G

<400> 38
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aaactgggca acgaccaata caaggcgcag aactatcaga atgcactcaa gctctacacg       60
gatgccatat cgctgtgtcc ggactcggcg gcatactatg gcaatcgggc cgcctgctac      120
atgatgctgc tcaactataa tagcgccctg accgacgccc gacacgccat acgcatcgat      180
ccgggcttcg agaaggccta cgtccgtgtg gccaagtgct gtctggccct gggcgacatt      240
attggcaccg aacaggccgt caaaatggtc aacgagctga attcgcttag cacggctgtt      300
gctgccgaac agacggcggc gcaaaagttg cccaanttgg aggccaccat tcaggcgaac      360
tacgatacga aatcctatcg caatgtggtc ttctatttgg atagtgcctt gaaattggcg      420
cccgcatgtt tgaaatatcg tctactcaag gctgagtgcc ttgcattttt ggggcgatgt      480
gatgaggcct tggacattgc ggtcagtgta atgaaactgg ataccacatc ggcggatgcg      540
atatacgtga gaggtctgtg cctgtactac acggacaacc tggacaaggg aattcttcat      600
ttcgagcgcg ccctgaccct cgacccggac cactaccagt ccaagcagat gcgc            654
```

<210> 39
<211> 631
<212> DNA
<213> Drosophila

<400> 39
```
acgacagaac agccaaccat cgatgtcaaa gcagagcaaa ttgtgcccaa ggacgcggca       60
accattgccg aggagaagaa gaaactgggc aacgaccaat acaaggcgca gaactatcag      120
aatgcactca agctctacac ggatgccata tcgctgtgtc cggactcggc ggcatactat      180
ggcaatcggg ccgcctgcta catgatgctg ctcaactata atagcgccct gaccgacgcc      240
cgacacgcca tacgcatcga tccgggcttc gagaaggcct acgtccgtgt ggccaagtgc      300
tgtctggccc tgggcgacat tattggcacc gaacaggccg tcaaaatggt caacgagctg      360
aattcgctta gcacggctgt tgctgccgaa cagacggcgg cgcaaaagtt gcgccaattg      420
gaggccacca ttcaggcgaa ctacgatacg aaatcctatc gcaatgtggt cttctatttg      480
gatagtgcct tgaaattggc gcccgcctgt ttgaaatatc gtctactcaa ggctgagtgc      540
cttgcatttt tggggcgatg tgatgaggcc ttggacattg cggtcagtgt aatgaaactg      600
```

```
gataccacat cggcggatgc gatatacgtg a                              631

<210> 40
<211> 562
<212> DNA
<213> Drosophila

<400> 40
acgacagaac agccaaccat cgatgtcaaa gcagagcaaa ttgtgcccaa ggacgcggca      60
accattgccg aggagaagaa gaaactgggc aacgaccaat acaaggcgca gaactatcag     120
aatgcactca agctctacac ggatgccata tcgctgtgtc cggactcggc ggcatactat     180
ggcaatcggg ccgcctgcta catgatgctg ctcaactata atagcgccct gaccgacgcc     240
cgacacgcca tacgcatcga tccgggcttc gagaaggcct acgtccgtgt ggccaagtgc     300
tgtctggccc tgggcgacat tattggcacc gaacaggccg tcaaaatggt caacgagctg     360
aattcgctta gcacggctgt tgctgccgaa cagacggcgg cgcaaaagtt gcgccaattg     420
gaggccacca ttcaggcgaa ctacgatacg aaatcctatc gcaatgtggt cttctatttg     480
gatagtgcct tgaaaattgg cgcccgcctgt ttgaaatatc ggctactcaa agctgagtgc     540
cttgcatttt tggggcgatg tg                                             562

<210> 41
<211> 541
<212> DNA
<213> Drosophila

<400> 41
ccatacaaaa cacaaaattc aagtttaaaa actaaatagg caactaaaag ggaagccgca      60
gcgaataaag tgatttgctg aaagagacgt aagaaagtta atcgcatcga aggcaccaga     120
aatcgggggat ttctaacacg gcgcgcgtgc gacgtacata catacgcaag cgcacacaca     180
cacgaacaat tacttgccat tgacgcaaaa gcgaaaaagc agtggaataa aggggaattg     240
acaaataaca acgtttttgca agcactggac tctggtcgct ggtgttcttt cattttgtaa     300
ttgccacgca tggacgacga agtaattgaa attagcgaca gcgaacgcga agaaacctca     360
tcgaactccg aaatggatgt ggaaataacg acagaacagc caaccatcga tgtcaaagca     420
gagcaaattg tgcccaagga cgcggcaacc attgccgagg agaagaagaa actgggcaac     480
gaccaataca aggcgcagaa ctatcagaat gcactcaagc tctacacgga tgccatatcg     540
c                                                                   541

<210> 42
<211> 561
<212> DNA
<213> Drosophila

<220>
<221> misc_feature
<222> (1)...(561)
<223> n = A,T,C or G

<400> 42
ttcgttcggc catacaaaac acaaaattca agtttaaaaa ctaaataggc aactaaaagg      60
gaagccgcag cgaataaagt gatttgctga aagagacgta agaaagttaa tcgcatcgaa     120
ggcaccagaa atcgggggatt tctaacacgg cgcgcgtgcg acgtacatac atacgcaagc     180
gcacacacac acgaacaatt acttgccatt gacgcaaaag cgaaaaagca gtggaataaa     240
ggggaattga caaataacaa cgtttttgcaa gcactggact ctggtcgctg gtgttctttc     300
attttgtaat tgccacgcat ggacgacgaa gtaattgaaa ttagcgacag cancgcacag     360
aaacctcatc gaactccgaa atggatgtgg aaataacgac agaacagcca accatcgatg     420
tcaaagcaga gcaaattgtg cccaaggacg cggcaaccat tgccgaggag aagaagaaac     480
tgggcaacga ccaatacaag gcgcagaact atcagaatgc actcaagctc tacacggatg     540
ccatatcgct gtgtccggac t                                             561

<210> 43
<211> 618
<212> DNA
```

<213> Drosophila

<220>
<221> misc_feature
<222> (1)...(618)
<223> n = A,T,C or G

<400> 43
ttcgttcggc catacaaaac acaaaattca agtttaaaaa ctaaataggc aactaaaagg   60
gaagccgcag cgaataaagt gatttgctga aagagacgta agaaagttaa tcgcatcgaa   120
ggcaccagaa atcggggatt tctaacacgg cgcgcgtgcg acgtacatac atacgcaagc   180
gcacacacac acgaacaatt acttgccatt gacgcaaaag cgaaaaagca gtggaataaa   240
ggggaattga caaataacaa cgttttgcaa gcactggact ctggtcgctg gtgttctttc   300
attttgtaat tgccacgcat ggacgacgaa gtaattgaaa ttagcgacac ganacgcgaa   360
gaaacctcat cgaactccga aatggatgtg gaaataacga cagaacagcc aaccatcgat   420
gtcaaagcag agcaaattgt gcccaaggac gcggcaacca ttgccgagga gaagaagaaa   480
ctgggcaacg accaatacaa ggcgcagaac tatcagaatg cactcaagct ctacacggat   540
gccatatcgc tgtgtccgga ctcggcggca tactatggca atcgggccgc ctgctacatg   600
atgctgctca actataat   618

<210> 44
<211> 582
<212> DNA
<213> Drosophila

<400> 44
ttcgttcggc catacaaaac acaaaattca agtttaaaaa ctaaataggc aactaaaagg   60
gaagccgcag cgaataaagt gatttgctga aagagacgta agaaagttaa tcgcatcgaa   120
ggcaccagaa atcggggatt tctaacacgg cgcgcgtgcg acgtacatac atacgcaagc   180
gcacacacac acgaacaatt acttgccatt gacgcaaaag cgaaaaagca gtggaataaa   240
ggggaattga caaataacaa cgttttgcaa gcactggact ctggtcgctg gtgttctttc   300
attttgtaat tgccacgcat ggacgacgaa gtaattgaaa ttagcgacac gaatcgcgaa   360
gaaacctcat cgaactccga aatggatgtg gaaataacga cagaacagcc aaccatcgat   420
gtcaaagcag agcaaattgt gcccaaggac gcggcaacca ttgccgagga gaagaagaaa   480
ctgggcaacg accaatacaa ggcgcagaac tatcagaatg cactcaagct ctacacggat   540
gccatatcgc tgtgtccgga ctcggcggca tactatggca at   582

<210> 45
<211> 550
<212> DNA
<213> Drosophila

<400> 45
ttcgttcggc catacaaaac acaaaattca agtttaaaaa ctaaataggc aactaaaagg   60
gaagccgcag cgaataaagt gatttgctga aagagacgta agaaagttaa tcgcatcgaa   120
ggcaccagaa atcggggatt tctaacacgg cgcgcgtgcg acgtacatac atacgcaagc   180
gcacacacac acgaacaatt acttgccatt gacgcaaaag cgaaaaagca gtggaataaa   240
ggggaattga caaataacaa cgttttgcaa gcactggact ctggtcgctg gtgttctttc   300
attttgtaat tgccacgcat ggacgacgaa gtaattgaaa ttagcgacag cgaacgcgaa   360
gaaacctcat cgaactccga aatggatgtg gaaataacga cagaacagcc aaccatcgat   420
gtcaaagcag agcaaattgt gcccaaggac gcggcaacca ttgccgagga gaagaagaaa   480
ctgggcaacg accaatacaa ggcgcagaac tatcagaatg cactcaagct ctacacggat   540
gccatatcgc   550

<210> 46
<211> 547
<212> DNA
<213> Drosophila

<220>
<221> misc_feature

<222> (1)...(547)
<223> n = A,T,C or G

<400> 46
ttcgttcggc catacaaaac acaaaattca agtttaaaaa ctaaataggc aactaaaagg   60
gaagccgcag cgaataaagt gatttgctga aagagacgta agaaagttaa tcgcatcgaa   120
ggcaccagaa atcggggatt tctaacacgg cgcgcgtgcg acgtacatac atacgcaagc   180
gcacacacac acgaacaatt acttgccatt gacgcaaaag cgaaaaagca gtggaataaa   240
ggggaattga caaataacaa cgttttgcaa ggcactggac tctggtcgct ggtgttcttt   300
cattttgtaa ttgccacgca tggacgacga agtaattgaa attagcgaca cganacgcga   360
agaaacctca tcgaactccg aaatggatgt ggaaataacg acagaacagc caaccatcga   420
tgtcaaagca gagcaaattg tgcccaagga cgcggcaacc attgccgagg agaagaagaa   480
actgggcaac gaccaataca aggcgcagaa ctatcagaat gcactcaagc tctacacgga   540
tgccata   547

<210> 47
<211> 487
<212> DNA
<213> Drosophila

<400> 47
tcggttcgtt cggccataca aaacacaaaa ttcaagttta aaaactagat aggcaactaa   60
aagggaagcc gcagcgaata aagtgatttg ctgaaagaga cgtaagaaag ttaatcgcat   120
cgaaggcacc agaaatcggg gatttctaac acggcgcgcg tgcgacgtac atacatacgc   180
aagcgcacac acacgaac aattacttgc cattgacgca aaagcgaaaa agcagtggaa   240
taaaggggaa ttgacaaata acaacgtttt gcaagcactg gactctggtc gctggtgttc   300
tttcattttg taattgccac gcatggacga cgaagtaatt gaaattagcg acagcagcgc   360
ggagaaacct catcgaactc cgaaatggat gtggacataa cgacagaaca gccaaccatc   420
gatgtcaaag cagagcggat tgtgcccaag gacgcggcaa ccattgccga ggagaagaag   480
aaactgg   487

<210> 48
<211> 246
<212> DNA
<213> Drosophila

<400> 48
tgtgctcggt tcgttcggcc atacaaaaca caaaattcaa gtttaaaaac taaataggca   60
actaaaaggg aagccgcagc gaataaagtg atttgctgaa agagacgtaa gaaagttaat   120
cgcatcgaag gcaccagaaa tcggggattt ctaacacggc gcgcgtgcga cgtacataca   180
tacgcaagcg cacacacaca cgaacaatta cttgccattg acgcaaaagc gaaaaagcag   240
tggaat   246

<210> 49
<211> 170
<212> DNA
<213> Drosophila

<400> 49
ttttccgtgt gctcggttcg ttcggccata caaaacacaa aattcaagtt taaaaactaa   60
ataggcaact aaaagggaag ccgcagcgaa taaagtgatt tgctgaaaga gacgtaagaa   120
agttaatcgc atcgaaggca ccagaaatcg ggatttcta aacggcgcg   170

<210> 50
<211> 511
<212> DNA
<213> Drosophila

<400> 50
ttttccgtgt gctcggttcg ttcggccata caaaacacaa aattcaagtt taaaaactaa   60
ataggcaact aaaagggaag ccgcagcgaa taaagtgatt tgctgaaaga gacgtaagaa   120

31

```
agttaatcgc atcgaaggca ccagaaatcg gggatttcta acacggcgcg cgtgcgacgt     180
acatacatac gcaagcgcac acacacacga acaattactt gccattgacg caaaagcgaa     240
aaagcagtgg aataaagggg aattgacaaa taacaacgtt ttgcaagcac tggactctgg     300
tcgctggtgt tctttcattt tgtaattgcc acgcatggac gacgagtaat tgaaattagc     360
gacagcatac gcgaagaaac ctcatcgaac tccgaaatgg atgtggaaat aacgacagaa     420
cagccaacca tcgatgtcaa agcagagcaa attgtgccca aggacgcggc aaccattgcc     480
gaggagaaga agaaactggg caacgaccaa t                                     511
```

<210> 51
<211> 702
<212> DNA
<213> Drosophila

<220>
<221> misc_feature
<222> (1)...(702)
<223> n = A,T,C or G

<400> 51
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tttttccgtg tgctcggttc gttcggccat acaaaacaca aaattcaagt ttaaaaacta      60
aataggcaac taaaagggaa gccgcagcga nataaagtga tttgctgaaa gagacgtaag     120
aaagttaatc gcatcgaagg caccagaaat cggggatttc taacacggcg cgcgtgcacg     180
tacatacata cgcaagcgca cacacacacg aacaattact tgccattgac gcaaaagcga     240
aaaagcagtg gaataaaggg gaattgacaa ataacaacgt tttgcaagca ctggactctg     300
gtcgctggtg ttctttcatt ttgtaattgc cacgcatgga cgacgaagta attgaaatta     360
gcgaccggan cgcgnagaaa cctcatcgaa ctccgaaatg gatgtggaaa taacgacaga     420
acagccaacc atcgatgtca agcagagca  aattgtgccc aaggacgcgg caaccattgc     480
cgaggagaag aagaaactgg gcaacgacca atacaaggcg cagaactatc agaatgcact     540
caagctctac acggatgcca tatcgctgtg tccggactcg gcggcatact atggcaatcg     600
ggccgcctgc tacatgatgc tgctcaacta taatagcgcc ctgaccgacg cccgacacgc     660
catacgcatc gatccgggct tcgagaaggc ctacgtccgt gt                        702
```

<210> 52
<211> 598
<212> DNA
<213> Drosophila

<220>
<221> misc_feature
<222> (1)...(598)
<223> n = A,T,C or G

<400> 52
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tttttccgtg tgctcggttc gttcggccat acaaaacaca aaattcaagt ttaaaaacta      60
aataggcaac taaaagggaa gccgcagcga ataaagtgat ttgctgaaag agacgtaaga     120
aagttaatcg catcgaaggc accagaaatc ggggatttct aacacggcgc gcgtgcgacg     180
tacatacata cgcaagcgca cacacacacg aacaattact tgccattgac gcaaaagcga     240
aaaagcagtg gaataaaggg gaattgacaa ataacaacgt tttgcaagca ctggactctg     300
gtcgctggtg ttctttcatt ttgtaattgc cacgcatgga cgacgaagta attgaaatta     360
gcgacaggan cgcgnagaaa cctcatcgaa ctccgaaatg gatgtggaaa taacgacaga     420
acagccaacc atcgatgtca agcagagca  aattgtgccc aaggacgcgg caaccattgc     480
cgaggagaag aagaaactgg gcaacgacca atacaaggcg cagaactatc agaatgcact     540
caagctctac acggatgcca tatcgctgtg tccggactcg gcggcatact atggcaat      598
```

<210> 53
<211> 669
<212> DNA
<213> Drosophila

<220>
<221> misc_feature

32

<222> (1)...(669)
<223> n = A,T,C or G

<400> 53
acaaaaatgt ctttattcgg agcgttgatg ggtgatttcg acgacgatct cggccttatg   60
aacaaccaca tgaaccacac tatgaacgcg atgaacatgc agatgcgctc gatgaatcgc   120
ctgatgaaca gctttatgcc cgatcccttc atgcaggtct cgccctttga ccagggattc   180
cagcagaacg ctctcatgga gcgtccgcag atgccggcca tgccagccat gggcctcttc   240
ggcatgccca nntgatgcca caaactttaa tcgcccgttg aacgctgata ttggtggcaa   300
ttcaggcgca tccttctgcc agagcaccgt gatgaccatg tcatcgggtc ccgatgggcg   360
tcctcagatc taccaggcca gcactagtac caaaacagga ccgggaggcg ttcgtgagac   420
ccgcaggacg gtgcaggact cgcgcactgg ggtgaagaag atggccattg gtcatcacat   480
cggcgagcgg gcacacatta ttgagaaaga gcaggacatg cgctcaggac aactggagga   540
gcgccaggag ttcattaatc tggaggaggg agaagccgag cagtttgaca gggagtttac   600
atcgcgcgct agtcgcggag cgtgcagtca agacatcatg ctggtggcat gcaggccatc   660
atgcccgcc   669

<210> 54
<211> 563
<212> DNA
<213> Drosophila

<400> 54
agaaagccaa cacaatccac aaaaatgtct ttattcggag cgttgatggg tgatttcgac   60
gacgatctcg gccttatgaa caaccacatg aaccacacta tgaacgcgat gaacatgcag   120
atgcgctcga tgaatcgcct gatgaacagc tttatgcccg atcccttcat gcaggtctcg   180
ccctttgacc agggattcca gcagaacgct ctcatggagc gtccgcagat gccggccatg   240
ccagccatgg gcctcttcgg catgcccatg atgccaaact ttaatcgcct gttgaacgct   300
gatattggtg gcaattcagg cgcatccttc tgccagagca ccgtgatgac catgtcatcg   360
ggtcccgatg ggcgtcctca gatctaccag gccagcacta gtaccaaaac aggaccggga   420
ggcgttcgtg agacccgcag gacggtgcag gactcgcgca ctggggtgaa gaagatggcc   480
attggtcatc acatcggcga gcgggcacac attattgaga aagagcagga catgcgctca   540
ggacaactgg aggagcgcca gga   563

<210> 55
<211> 763
<212> DNA
<213> Drosophila

<400> 55
aaaattcgag caacagaaag ccaacacaat ccacaaaaat gtctttattc ggagcgttga   60
tgggtgattt cgacgacgat ctcggcctta tgaacaacca catgaaccac actatgaacg   120
cgatgaacat gcagatgcgc tcgatgaatc gcctgatgaa cagctttatg cccgatccct   180
tcatgcaggt ctcgcccttt gaccagggat tccagcagaa cgctctcatg gagcgtccgc   240
agatgccggc catgccagcc atgggcctct tcggcatgcc catgatgcca aactttaatc   300
gcctgttgaa cgctgatatt ggtggcaatt caggcgcatc cttctgccag agcaccgtga   360
tgaccatgtc atcgggtccc gatgggcgtc ctcagatcta ccaggccagc actagtacca   420
aaacaggacc gggaggcgtt cgtgagaccc gcaggacggt gcaggactcg cgcactgggg   480
tgaagaagat ggccattggt catcacatcg gcgagcgggc acacattatt gagaaagagc   540
aggacatgcg ctcaggacaa ctggaggagc gccaggagtt cattaatctg gaggagggag   600
aagccgagca gtttgacagg gagtttacat cgcgcgctag tcgcggaggc gtgcagtcaa   660
gacatcatgc tggtggcatg caggccatca tgcccgcccg tccagcggca cacacctcga   720
cgttgaccat tgagccagtg gaggacgacg acgacgatga tgc   763

<210> 56
<211> 709
<212> DNA
<213> Drosophila

<220>
<221> misc_feature

33

<222> (1)...(709)
<223> n = A,T,C or G

<400> 56
agaagaaaat tcgagcaaca gaaagccaac acaatccaca aaaatgtctt tattcggagc   60
gttgatggt gatttcgacg acgatctcgg ccttatgaac aacccacatga accacactat   120
gaacgcgatg aacatgcaga tgcgctcgat gaatcgcctg atgaacagct ttatgcccga   180
tcccttcatg caggtctcgc cctttgacca gggattccag cagaacgctc tcatggagcg   240
tccgcagatg ccggccatgc cagccatggg cctcttcggc atgcccatga tgccaaactt   300
taatcgcctg ttgaacgctg atattggtgg caattcaggc gcatccttct gccagagcac   360
cgtgatgacc atgtcatcgg gtcccgatgg gcgtcctcag atctaccagg ccagcactag   420
taccaaaaca ggaccgggag gcgttcgtga gacccgcagg acggtgcagg actcgcgcac   480
tggggtgaag aagatggcca ttggtcatca catcggcgag cgggcacaca ttattgagaa   540
agagcaggac atgcgctcag dacaactgga ggagcgccag gagttcatta atctggagga   600
gggagaagcc gagcagtttg acagggagtt tacatcgcgc gctagtcgcg gagcggtgca   660
gtcaagacat catgctggtg gcatgcatgc catcatgccc gnccgtcca   709

<210> 57
<211> 599
<212> DNA
<213> Drosophila

<400> 57
aaagaagaaa attcgagcaa cagaaagcca acacaatcca caaaaatgtc tttattcgga   60
gcgttgatgg gcgatttcga cgacgatctc ggccttatga acaaccacat gaaccacact   120
atgaacgcga tgaacatgca gatgcgctcg atgaatcgcc tgatgaacag ctttatgccc   180
gatcccttca tgcaggtctc gccctttgac cagggattcc agcagaacgc tctcatggag   240
cgtccgcaga tgccggccat gccagccatg ggactcttcg gcatgcccat gatgccaaac   300
tttaatcgcc tgttgaacgc tgatattggt ggcaattcag gcgcatcctt ctgccagagc   360
accgtgatga ccatgtcatc gggtcccgat gggcgtcctc agatctacca ggccagcact   420
agtaccaaga caggaccggg aggcgttcgt gagacccgca agacggtgca ggactcgcgc   480
actggggtga agaagatggc cattggtcat cacatcggcg agcgggcaca cattattgag   540
aaagagcagg acatgcgctc aggacaactg gaggagcgcc aggagttcat taatctgga   599

<210> 58
<211> 608
<212> DNA
<213> Drosophila

<400> 58
aaagaagaaa attcgagcaa cagaaagcca acacaatcca caaaaatgtc tttattcgga   60
gcgttgatgg gcgatttcga cgacgatctc ggccttatga acaaccacat gaaccacact   120
atgaacgcga tgaacatgca gatgcgctcg atgaatcgcc tgatgaacag ctttatgccc   180
gatcccttca tgcaggtctc gccctttgac cagggattcc agcagaacgc tctcatggag   240
cgtccgcaga tgccggccat gccagccatg ggactcttcg gcatgcccat gatgccaaac   300
tttaatcgcc tgttgaacgc tgatattggt ggcaattcag gcgcatcctt ctgccagagc   360
accgtgatga ccatgtcatc gggtcccgat gggcgtcctc agatctacca ggccagcact   420
agtaccaaga caggaccggg aggcgttcgt gagacccgca agacggtgca ggactcgcgc   480
actggggtga agaagatggc cattggtcat cacatcggcg agcgggcaca cattattgag   540
aaagagcagg acatgcgctc aggacaactg gaggagcgcc aggagttcat taatctggag   600
gagggaga   608

<210> 59
<211> 585
<212> DNA
<213> Drosophila

<400> 59
aaagaagaaa attcgagcaa cagaaagcca acacaatcca caaaaatgtc tttattcgga   60
gcgttgatgg gcgatttcga cgacgatctc ggccttatga acaaccacat gaaccacact   120
atgaacgcga tgaacatgca gatgcgctcg atgaatcgcc tgatgaacag ctttatgccc   180

34

```
gatcccttca tgcaggtctc gccctttgac cagggattcc agcagaacgc tctcatggag      240
cgtccgcaga tgccggccat gccagccatg ggactcttcg gcatgcccat gatgccaaac      300
tttaatcgcc tgttgaacgc tgatattggt ggcaattcag gcgcatcctt ctgccagagc      360
accgtgatga ccatgtcatc gggtcccgat gggcgtcctc agatctacca ggccagcact      420
agtaccaaga caggaccggg aggcgttcgt gagacccgca agacggtgca ggactcgcgc      480
actggggtga agaagatggc cattggtcat cacatcggcg agcgggcaca cattattgag      540
aaagagcagg acatgcgctc aggacaactg gaggagcgcc aggag                      585
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<210> 60
<211> 591
<212> DNA
<213> Drosophila

<400> 60
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aaagaagaaa attcgagcaa cagaaagcca acacaatcca caaaaatgtc tttattcgga       60
gcgttgatgg gtgatttcga cgacgatctc ggccttatga acaaccacat gaaccacact      120
atgaacgcga tgaacatgca gatgcgctcg atgaatcgcc tgatgaacag ctttatgccc      180
gatcccttca tgcaggtctc gccctttgac cagggattcc agcagaacgc tctcatggag      240
cgtccgcaga tgccggccat gccagccatg ggcctcttcg gcatgcccat gatgccaaac      300
tttaatcgcc tgttgaacgc tgatattggt ggcaattcag gcgcatcctt ctgccagagc      360
accgtgatga ccatgtcatc gggtcccgat gggcgtcctc agatctacca ggccagcact      420
agtaccaaaa caggaccggg aggcgttcgt gagacccgca ggacggtgca ggactcgcgc      480
actggggtga agaagatggc cattggtcat cacatcggcg agcgggcaca cattattgag      540
aaagagcagg acatgcgctc aggacaactg gaggaacgcc aggagttcat t              591
```

<210> 61
<211> 657
<212> DNA
<213> Drosophila

<400> 61
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aaagaagaaa attcgagcaa cagaaagcca acacaatcca caaaaatgtc tttattcgga       60
gcgttgatgg gtgatttcga cgacgatctc ggccttatga acaaccacat gaaccacact      120
atgaacgcga tgaacatgca gatgcgctcg atgaatcgcc tgatgaacag ctttatgccc      180
gatcccttca tgcaggtctc gccctttgac cagggattcc agcagaacgc tctcatggag      240
cgtccgcaga tgccggccat gccagccatg ggcctcttcg gcatgcccat gatgccaaac      300
tttaatcgcc tgttgaacgc tgatattggt ggcaattcag gcgcatcctt ctgccagagc      360
accgtgatga ccatgtcatc gggtcccgat gggcgtcctc agatctacca ggccagcact      420
agtaccaaaa caggaccggg aggcgttcgt gagacccgca ggacggtgca ggactcgcgc      480
actggggtga agaagatggc cattggtcat cacatcggcg agcgggcaca cattattgag      540
aaagagcagg acatgcgctc aggacaactg gaggagcgcc aggagttcat taatctggag      600
gagggagaag ccgagcagtt tgacagggag tttacatcgc gcgctagtcg cggagcg        657
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<210> 62
<211> 718
<212> DNA
<213> Drosophila

<220>
<221> misc_feature
<222> (1)...(718)
<223> n = A,T,C or G

<400> 62
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gtgaaaattc tgcatacgga aagaagaaaa ttcgagcaac agaaagccaa cacaatccac       60
aaaaatgtct ttattcggag cgttgatggg tgatttcgac gacgatctcg gccttatgaa      120
caaccacatg aaccacacta tgaacgcgat gaacatgcag atgcgctcga tgaatcgcct      180
gatgaacagc tttatgcccg atcccttcat gcaggtctcg ccctttgacc agggattcca      240
gcagaacgct ctcatggagc gtccgcagat gccggccatg ccagccatgg gcctcttcgg      300
catgcccatg atgccaaact taatcgcct gttgaacgct gatattggtg gcaattcagg      360
cgcatccttc tgccagagca ccgtgatgac catgtcatcg ggtcccgatg ggcgtcctca      420
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35

gatctaccag gccagcacta gtaccaaaac aggaccggga ggcgttcgtg agacccgcag   480
gacggtgcag gactcgcgca ctggggtgaa gaagatggcc attggtcatc acatcggcga   540
gcgggcacac attattgaga aagagcagga catgcgctca ggacaactgg aggagcgcca   600
ggagttcatt aatctggagg agggagaagc cgagcagttt gacagggagt ttacatcgcg   660
cgctagtcgc ggagcggtgc agtcaagaca tcatgctggt ggcatgcang ccatcatg   718

<210> 63
<211> 497
<212> DNA
<213> Drosophila

<400> 63
atattcgtga aaattctgca tacggaaaga agaaaattcg agcaacagaa agccaacaca   60
atccacaaaa atgtctttat tcggagcgtt gatgggcgat ttcgacgacg atctcggcct   120
tatgaacaac cacatgaacc acactatgaa cgcgatgaac atgcagatgc gctcgatgaa   180
tcgcctgatg aacagcttta tgcccgatcc cttcatgcag gtctcgccct ttgaccaggg   240
attccagcag aacgctctca tggagcgtcc gcagatgccg gccatgccag ccatgggact   300
cttcggcatg cccatgatgc caaactttaa tcgcctgatg aacgctgcta ttggtgggaa   360
ttcaggcgca tccttctgcc agagcaccgg gatgaccatg tcatcgggtt ccgatgggcg   420
tgctcagatc taccaggcca gcactagttc caagacagga ccgggaggcg ttcgtgagac   480
ccgcaagacg gtgcagg   497

<210> 64
<211> 685
<212> DNA
<213> Drosophila

<400> 64
aaaatattcg tgaaaattct gcatacggaa agaagaaaat tcgagcaaca gaaagccaac   60
acaatccaca aaaatgtctt tattcggagc gttgatgggt gatttcgacg acgatctcgg   120
ccttatgaac aaccacatga accacactat gaacgcgatg aacatgcaga tgcgctcgat   180
gaatcgcctg atgaacagct ttatgcccga tcccttcatg caggtctcgc cctttgacca   240
gggattccag cagaacgctc tcatggagcg tccgcagatg ccggccatgc cagccatggg   300
cctcttcggc atgcccatga tgccaaactt taatcgcctg ttgaacgctg atattggtgg   360
caattcaggc gcatccttct gccagagcac cgtgatgacc atgtcatcgg gtcccgatgg   420
gcgtcctcag atctaccagg ccagcactag taccaaaaca ggaccgggag gcgttcgtga   480
gacccgcagg acggtgcagg actcgcgcac tggggtgaag aagatggcca ttggtcatca   540
catcggcgag cgggcacaca ttattgagaa agagcaggac atgcgctcag gacaactgga   600
ggagcgccag gagttcatta atctggagga gggagaagcc gagcagtttg acagggagtt   660
tacatcgcgc gctagtcgcg gagcg   685

<210> 65
<211> 540
<212> DNA
<213> Drosophila

<400> 65
aaagaaaata ttcgtgaaaa ttctgcatac ggaaagaaga aaattcgagc aacagaaagc   60
caacacaatc cacaaaaatg tctttattcg gagcgttgat gggtgatttc gacgacgatc   120
tcggccttat gaacaaccac atgaaccaca ctatgaacgc gatgaacatg cagatgcgct   180
cgatgaatcg cctgatgaac agctttatgc cgatccctt catgcaggtc tcgccctttg   240
accagggatt ccagcacgaa cgctctcatg gagcgtccgc agatgccggc catgcagcca   300
tgggcctctt cggcatgcca tgatgccaac tttaatcgcc tgttgaacgc tgatattggt   360
ggcaattcag gcgcatcctt ctgccagagc accgtgatga ccatgtcatc gggtcccgat   420
gggcggtcct cagatctacc aggccagcac tagtaccaaa acaggaccgg gaggcgttcg   480
tgagacccgc agaacggtgc aggactcgcg cactggggtg aagaagatgg gcattggtca   540

<210> 66
<211> 681
<212> DNA
<213> Drosophila

36

<400> 66

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acaaagaaaa tattcgtgaa aattctgcat acggaaagaa gaaaattcga gcaacagaaa        60
gccaacacaa tccacaaaaa tgtctttatt cggagcgttg atgggtgatt tcgacgacga       120
tctcggcctt atgaacaacc acatgaacca cactatgaac gcgatgaaca tgcagatgcg       180
ctcgatgaat cgcctgatga acagctttat gcccgatccc ttcatgcagg tctcgccctt       240
tgaccaggga ttccagcaga acgctctcat ggagcgtccg cagatgccgg ccatgccagc       300
catgggcctc ttcggcatgc ccatgatgcc aaactttaat cgcctgttga cgctgatat       360
tggtggcaat tcaggcgcat ccttctgcca gagcaccgtg atgaccatgt catcgggtcc       420
cgatgggcgt cctcagatct accaggccag cactagtacc aaaacaggac cgggaggcgt       480
tcgtgagacc cgcaggacgg tgcaggactc gcgcactggg gtgaagaaga tggccattgg       540
tcatcacatc ggcgagcggg cacacattat tgagaaagag caggacatgc gctcaggaca       600
actggaggag cgccaggagt tcattaatct ggaggaggga gaagccgagc agtttgacag       660
ggagtttaca tcgcgcgcta g                                                 681
```

<210> 67
<211> 675
<212> DNA
<213> Drosophila

<400> 67

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tgacaaagaa aatattcgtg aaaatctgca tacggaaaga ggaaaattcg agccacagaa        60
agccaccaca atccacaaaa atgtctttat tcggagcgtt gatgggtgat ttcgacgacg       120
atctcggcct tatgaacaac cacatgaacc acactatgaa cgcgatgaac atgcagatgc       180
gctcgatgaa tcgcctgatg aacagcttta tgcccgatcc cttcatgcag gtctcgccct       240
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ccatgggcct cttcggcatg cccatgatgc caaactttaa tcgcctgttg aacgctgata       360
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ccgatgggcg tcctcagatc taccaggcca gcactagtac caaaacagga ccgggaggcg       480
ttcgtgagac ccgcaagacg gtgcaggact cgcgcactgg ggtgaagaag atggccattg       540
gtcatcacat cggcgagcgg gcacacatta ttgagaaaga gcaggacatg cgctcaggac       600
aactggagga gcgcaggagt tcattaatct ggaggaggga gaagcgagca gtttgacagg       660
gagtttacat cgcgc                                                        675
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<210> 68
<211> 627
<212> DNA
<213> Drosophila

<400> 68

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gatctcggcc ttatgaacaa ccacatgaac cacactatga acgcgatgaa catgcagatg       180
cgctcgatga atcgcctgat gaacagcttt atgcccgatc ccttcatgca ggtctcgccc       240
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gccatgggac tcttcggcat gcccatgatg ccaaacttta tcgcctgtt gaacgctgat       360
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cccgatgggc gtcctcagat ctaccaggcc agcactagta ccaagacagg accgggaggc       480
gttcgtgaga cccgcaagac ggtgcaggac tcgcgcactg gggtgaagaa gatggccatt       540
ggtcatcaca tcggcgagcg ggcacacatt attgagaaag agcaggacat gcgctcagga       600
caactggagg agcgccagga gttcatt                                           627
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<210> 69
<211> 686
<212> DNA
<213> Drosophila

<400> 69

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cagaaagcca acacaatcca caaaaatgtc tttattcgga gcgttgatgg gtgatttcga       120
cgacgatctc ggccttatga acaaccacat gaaccacact atgaacgcga tgaacatgca       180
```

```
gatgcgctcg atgaatcgcc tgatgaacag ctttatgccc gatcccttca tgcaggtctc    240
gccctttgac cagggattcc agcagaacgc tctcatggag gtccgcagat gccggccatg    300
cagccatggg cctcttcggc atgcccatga tgccaaactt taatcgcctg ttgaacgctg    360
atattggtgg caattcaggc gcatccttct gccagagcac cgtgatgacc atgtcatcgg    420
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ggacaactgg aggagcgcca ggagttcatt aatctggagg agggagaagc cgagcagttt    660
gacagggagt ttacatcgcg cgctag                                        686
```